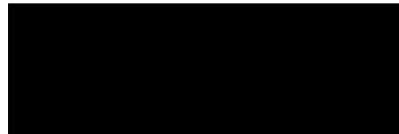


EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL ON ENVIRONMENTAL QUALITY
722 JACKSON PLACE, N. W.
WASHINGTON, D. C. 20006

PROPOSALS FOR SUBMISSION TO THE SOVIET
UNION UNDER THE U.S.-SOVIET
AGREEMENT ON COOPERATION IN
THE FIELD OF ENVIRONMENTAL
PROTECTION OF MAY 23, 1972

COUNCIL ON ENVIRONMENTAL QUALITY
WASHINGTON, D. C.

25X1A



We are now circulating this to agencies (including DOD through John Busterud, by the way) seeking clearance by Aug. 11. In my absence, please speak with FSO W. Alston Hayne, who will be covering this for me. He is on 382-1361. I will be away for--I hope--about two weeks. If you have problem areas of any kind, please let Otty Hayne know.

Jack Perry

I. Air Pollution

Project I.1

- : Designate a city in each nation as a focus for joint projects in air pollution abatement. Cincinnati or St. Louis is a likely US city. Tbilisi, Donetsk or Kiev appear to be possible USSR candidates.

Tasks

- : 1) Mutual visits of individuals concerned with all aspects of the problem (scientists, technicians, analysts, administrators and political leaders) to orient themselves to the problems in the two cities and to plan specific joint projects.
- 2) Work with Soviet officials on air pollution modeling techniques for application to the air pollution problem in the Soviet city.
- 3) Exchange existing control technology (scrubbers, precipitators) for installation and testing in both countries, and establish joint research program for development of new control programs in the respective cities.
- 4) Exchange of personnel for on-site work in the respective cities.

First step

- : USSR team to visit US in October for a week to be briefed on the control program and modeling efforts and to make plans for the next steps in the joint program. Would stop for brief visit at EPA's Research Triangle facilities.

Costs

: Visits and exchanges information in the neighborhood of \$100,000 per year, covered from existing funds. Transfers of control devices dependent on specific agreements reached.

Agency

: EPA

I. Air Pollution

Project I. 2 : Joint project to improve the measurement and monitoring of air pollution.

Tasks :

- 1) Exchange of information on air pollution measurement instrumentation in the research or prototype stage of development.
- 2) Exchange of information on methods and techniques for measuring pollutants in ambient air.
- 3) Exploration of possibilities of joint research on sampling from aircraft platforms.
- 4) Joint effort to standardize sampling and analytic methods of monitoring background levels of pollutants.

First step : US team to visit USSR in early 1973 to review Soviet activities and to plan continuing program.

Costs : FY 1973 costs, primarily for travel and information exchange, estimated at \$40,000.

Agency : EPA

I. Air Pollution

Project I. 3 : Exchange information on all aspects of motor vehicle pollution control technology, with objective of collaboration in special areas of mutual interest.

Tasks : 1) Respective visits of experts to review research and development efforts in the two nations.

2) Exchange of technical information.

3) Exploration of possibilities for joint research efforts.

First step : Visit of a Soviet team in October to review the United States' program, including the EPA research station in Ann Arbor, Michigan.

Costs : FY 1973 costs estimated at \$60,000 for travel and exchange of information (from available funds). Future funding dependent on arrangements reached.

Agencies : EPA, DOT

II. Water Pollution

Project II. 1

- : Designate two rivers or two lakes or both in the two countries which share common problems in water pollution. Use these as the basis for exchange of information and joint projects between the two nations.

Tasks

- : 1) The US may have more experience in the modeling of water pollution and the development of river basin control plans such as for the Delaware. These same techniques could be jointly applied to a Soviet river basin.
- 2) The USSR is reported to have considerable experience with land disposal of sewage, which is of increasing interest to the US. The Soviet practices should be compared with the Muskegon project in Michigan, and working teams might be exchanged. Disposal of sludge is a related common problem.
- 3) An advanced US waste treatment plant might be erected in the Soviet Union. Special attention would be given to opportunities for sales of US equipment and technology to the USSR.
- 4) The US could profit from advanced work in the Soviet Union in urban hydrology and treatment of storm water.
- 5) In the area of industrial waste treatment, technologies and techniques related to particular industries, such as pulp and paper, petroleum and chemical plants, and advanced water conservation techniques, should

be compared and joint projects developed. The US might usefully sponsor an exhibit in Moscow of US technology in this area.

6) Joint study could be undertaken of beneficial uses of warm water effluents (waste water) in such areas as agriculture, aquaculture, and urban areas. Soviet specialists have done advanced work in this area. Investigation could be made of optimum utilization of low temperature heat to reduce thermal pollution.

7) Other areas where information exchange may be useful and where joint projects are possible include instrumentation and techniques for monitoring water quality, development of standards, thermal pollution, effect of pesticides on ecosystems, etc.

First steps: : 1) USSR team to visit US in late 1972 or early 1973 to review the program on the Delaware and to make plans for a joint project involving a comparable river in the USSR.

2) US to contact USSR regarding development of projects in land disposal of sewage and urban hydrology.

Costs : FY 1973 costs (from available funds), confined to travel and information exchange, estimated at less than \$50,000. Future year costs dependent on arrangements reached. Installation of advanced treatment plant, if desired by Soviets, would be funded by them.

Agencies : EPA, HUD

III. Agricultural

- Project III. 1 : Joint project of research testing to improve approaches to integrated pest management.
- Tasks :
- 1) Initial conference to exchange information and develop plans for a joint program. Areas of joint interest include the use of the Trichogamma wasp and integrated methods of mosquito control.
 - 2) Soviet scientists to join US research efforts at USDA laboratories. Visits would be made to Patuxent Wildlife Laboratories.
 - 3) Development of joint tasks involving parallel field testing in the two nations or other cooperative testing procedures.
- First step : US to propose initial conference in USSR for early 1973.
- Costs : FY 1973 costs limited to travel and information exchange (\$20,000). Subsequent costs (dependent on agreements reached) to be covered from normal funding. Funds for field testing, in particular, are available in FY 1973.
- Agencies : USDA, EPA

III. Agricultural

Project III. 2 : Joint program to exchange information and conduct research on pollution caused by feedlots.

Tasks : 1) Mutual visits to compare practices in raising livestock and poultry and current methods for dealing with animal wastes.

2) Exchange of information on current research, and the design of a joint research program.

First step : US to invite Soviets to visit in spring 1973 and to seek invitation to visit USSR.

Costs : Estimate of \$10,000 for travel and information exchange (from available funds).

Agencies : USDA, EPA

III. Agricultural

Project III. 3 : Information exchange and joint research on the environmental effects of pesticides, including effects on yield and quality of agricultural products.

Tasks : 1) Initial conference to exchange information and develop plans for joint research.
2) Exchange of research scientists.

First step : US to propose conference in US in late 1972.

Costs : Funds for travel and information exchange are available (\$20,000).

Agencies : EPA, USDA

III. Agricultural

Project III. 4 : Joint project to test alternative methods
o of large-scale reclamation of strip-mined lands.

Tasks

- : 1) Identify a number of techniques for large-scale reclamation of strip-mined land which are as yet substantially undemonstrated.
- 2) Choose areas with similar reclamation characteristics in each nation and assign alternative methods to each. At least one arid site and one temperate site should be chosen in both US and USSR.
- 3) Maintain joint monitoring programs over three-year test period, work out modifications in methods, compare results.
- 4) Areas suggested for US: Black Mesa (New Mexico) and West Virginia.

First step

- : US to invite Soviet group to visit in November 1972 to choose techniques and areas of application.

Costs

- : \$10,000 FY 1973 for initial visits (from existing funds).

Agencies

- : USDA, Interior

III. Agricultural

Project III. 5 : Exchange of information and development of joint projects in wind erosion and reforestation.

Tasks : 1) Initial conference to exchange information and plan joint project.

First step : US to propose exploratory visit to USSR in early 1973.

Costs : Initial funds (\$10,000) already available.

Agencies : USDA, Interior

III. Agricultural

- Project III. 6 : Joint study of forest resources and the effects of pollution upon them.
- Task : Set up US-Soviet Forestry Committee to exchange data and visits. Soviet team to visit University of California at Davis and associated agricultural stations and discuss joint research.
- First step : US to invite Soviet team to US for initial discussion in fall 1972.
- Costs : \$25,000 in FY 1973 (from available funds).
- Agencies : USDA, EPA, Interior

IV. Urban Environment

Project IV. 1 : Joint project comparing comprehensive systems of coping with environmental problems in urban areas.

Tasks

- : 1) Select case-study city in US for study by Soviet team from comparable city in USSR, aiming at first visit and initial conference in October-November 1972.
- 2) Soviet team would be expected to look at case-study city's environmental effort in its totality, offering critique and suggestions based on Soviet experience.
- 3) Participants would compare goals and policies which guide urban development in the two countries with respect to land use, open spaces, transportation, density, environmental impacts, solid waste disposal, etc.
- 4) Possible cities for useful comparison would be two cities which are known to have good records in environmental field, e.g., Atlanta and Alma-Ata. Alternative cities could be chosen in each country.
- 5) Later on, US team would visit Soviet city for similar over-all study.

First step

- : US to invite Soviet team to arrive in case-study city in October 1972.

Costs

- : Initial travel and information estimated at \$12,000 (from available funds).

Agencies

- : HUD, EPA, Interior

IV. Urban Environment

Project IV. 2 : Compare the experience in the US and USSR regarding the creation of new communities.

Tasks :

- 1) Conduct mutual visits and exchange information regarding the planning and design of new towns, both satellite and free standing. Because of experience to date, US should seek to learn primarily from USSR efforts toward free-standing communities. Likewise, since nearly all US experience is with satellite communities, we should offer Soviets results of our experience from that type.
- 2) Evaluation of free standing new communities should emphasize establishment of a social environment, problems of isolation and self-sufficiency, environmental effects of surrounding resource extraction activities, and overcoming structural uniformity through better community design.
- 3) Evaluation of satellite new communities should emphasize maintaining community integrity from surrounding development, establishing a proper degree of dependence on and independence from the nearby central city, interrelationships of jobs and housing, and timing of placement of public facilities.

First step : US to propose visit to USSR in 1973, with return Soviet visit later in year.

costs : Limited to travel and information exchange; estimated at \$20,000.

Agency : HUD

IV. Urban Environment

Project IV. 3

: Joint project on the preservation of urban architecture.

Tasks

: 1) US to invite USSR to establish joint program to develop institutional techniques and administrative procedures for the preservation and continued use of architecturally significant structures in urban areas.

2) Initial meeting in early 1973 in US, with several projects to be announced. Among projects to consider:

- (a) Exchange of information on existing mechanisms (e.g. US National Register of Historic Places, Historic Preservation Act Section 106 mechanism).
- (b) Develop criteria to identify structures and groups of structures in urban areas which should be preserved because of their architectural character.
- (c) Exchange ideas on what aspects of the other nation's architecture are considered valuable by visiting experts.
- (d) Develop criteria for the establishment of architectural preservation districts.

- 2 -

- (e) Discuss alternative measures to assure consideration of architectural value before structures are demolished.
- (f) Develop criteria for the rehabilitation and reuse of government buildings no longer needed for their original purpose.

First step

: US to propose meeting in US in early 1973, with return visit to USSR later in the year.

Costs

: Limited to travel, information exchange, and some staff work; estimated at \$20,000.

Agency

: National Endowment for the Arts and Humanities.

IV. Urban Environment

- Project IV. 4 : Exchange of information and joint projects in research and implementation programs in the control of noise.
- Tasks : 1) USSR officials to visit US and review our approaches, including Chicago efforts and to plan for joint program, including research on quieter devices.
- First step : Soviet team to visit US in October 1972.
- Costs : Initial costs of \$10,000 (already available).
- Agency : EPA

IV. Urban Environment

- Project IV. 5 : Joint project to test and demonstrate techniques for controlling urban pests (rats, mice, cockroaches, flies, etc.).
- Tasks : 1) Exchange information and experience on dealing with urban pests in the two nations.
- 2) Design a joint project to pair off a US and a Soviet city to demonstrate the effectiveness of existing procedures.
- First step : US to invite Soviet team to visit in spring 1973.
- Costs : Travel and information exchange estimated at \$20,000 (from available funds).
- Agency : HUD

V. Nature and Preserves

Project V. 1 : Set up a US-Soviet Wildlife Survival and Management program.

Tasks : 1) US would invite Soviets to establish joint cooperative program, with public and private participation, to provide umbrella for whole series of efforts tied to protection and productive management of wildlife. All US conservation groups would be invited to joint and submit ideas. Possibly exploratory meeting could be held if Soviet specialists could come to US following IUCN meeting in Banff.

2) Initial meeting of new group could be held in early 1973 with several specific projects announced. Among projects to be considered:

(a) Joint development of methods to increase public awareness of urgency of problem. Presentation of some rare animals could lend publicity. Survival centers might be established in both countries, with exchanges of animals. Gene banks could be set up for unique genetic strains. Exhibits and films could be exchanged. An endangered species data exchange might be initiated from the outset

(b) Special meetings could be held on polar bears, looking

to and joint research, and possible US moratorium. A general discussion of wild-life conservation treaties might lead to new proposals

- (c) Joint study of migratory birds, including swans, various waterfowl, and other, leading to joint agreements on preservation
- (d) Joint program in preservation of whales, including: i) marking programs, II) study of sensing techniques, iii) special research on gray whales and fin whale
- (e) Joint studies in other marine mammals
- (f) Telemetry of marine mammals.
- (g) Management of plains wildlife, including study of meat production from free-ranging animals such as Saiga antelope on the steppes
- (h) Bearing Sea research under the Marine Mammal Program
- (i) Study in reindeer management
- (j) Fishery management study
- (k) Study and management of predators, including wolves and Siberian tiger.

First step

- : US to invite Soviet specialists to visit US for explanatory discussions following Banff IUCN meeting in September. Formal launching of Wildlife Program to take place as soon thereafter as possible.

Costs

- : Overall costs will depend upon number of projects to be undertaken. Early costs will be for travel and initial exchange of information, and should be on order of \$200,000 (from existing funds).

Agencies

- : Interior, NOAA, Smithsonian, USDA

V. Nature and Preserves

Project V. 2

: Joint study of parks, forests and preserves in both countries.

Tasks

- : 1) An initial US team visit to look at problems and management in Soviet preserves.
- 2) Soviet return visit touring US national parks, and forests. Both visits to include ecological, research, management, interpretation and visitation aspects.
- 3) Conference on problems of national preserve areas.
- 4) Joint study of preserved areas where object is to maintain a given set of ecological conditions (land dedication).
- 5) Possibly there could be some "pairing" of national reserve areas with invitations for visits by nationals of the other country.
- 6) Staging of exhibits on national parks and reserves.

First step

: Propose US visit in fall 1972 to initiate exchange in this area.

Cost

: Only limited travel costs at outset (perhaps \$10,000, from existing funds in FY 1973).

Agencies

: Interior, USDA

V. Nature and Preserves

Project V. 3

: Joint study of Bowhead whale.

Tasks

: 1) Invite Soviet participation in research planned by Mr. Scott McVay in recording behavior, especially sonic, emissions, of Bowhead whale along northwest coast of Alaska.

2) At later date research might be pursued from Soviet territory.

First step

: If project is approved under US-Soviet Environmental program, Mr. McVay could issue invitation to Soviet participants for study to take place in April-May 1973.

Costs

: \$90,000 to be funded privately.

Agency

: Private

V. Nature and Preserves

Project V. 4 : Joint circumpolar study of the northern swans.

Tasks : 1) Invite Soviet participation in research on the northern swans planned by Professor William J. L. Sladen of John Hopkins. One or two Soviet biologists would be invited to work with the Sladen group in Alaska and in the Chesapeake Bay or California.

2) One of the Soviet participants might become an exchange scientists as a graduate student in ecology at Johns Hopkins.

3) In the second year of the program US biologists would work with Soviet scientists on the Siberian swans.

First step : Dr. Sladen would discuss US-Soviet cooperation in this program with Soviet participants at the Brno meeting of the International Wildfowl Research Bureau September 25-29, 1972.

Costs : \$40,000 to be arranged by Dr. Sladen.

Agency : Private.

VI. Marine Pollution

- Project VI. 1 : Develop a Siberian/Alaskan contingency plan for dealing jointly with oil spills in arctic areas.
- Tasks : 1) Initial visits to exchange information and technology on contingency planning, response and clean-up technology, and specific problems of oil spills in arctic areas.
- 2) Develop a joint US/USSR contingency plan for the Siberian/Alaskan zones.
- First step : Soviet team to visit US in October 1972.
- Costs : FY 1973 costs of \$25,000 for travel and information exchange from available funds.
- Agencies : Coast Guard, EPA

VI. Marine Pollution

Project VI. 2

- : Joint program to improve technology and develop new approaches to prevent and control oil pollution in the marine environment.

Tasks

- : 1) Initial conference to exchange information and develop a plan in areas such as the following:
 - (a) oil spill clean-up technology and response procedures.
 - (b) advanced vessel traffic control systems
 - (c) technology and systems for storewide reception of oily ballast and bilge water
 - (d) vessel design, on board oil/water separation technology, and operating procedures to meet IMCO goal of complete elimination of intentional discharges.

First step

- : US to contact USSR

Costs

- : \$10,000 for initial travel and information exchange (from available funds).

Agencies

- : Coast Guard, EPA

VI. Marine Pollution

Project VI. 3

- : Monitor sealife to detect short and long term effects of pollutants.

Tasks

- : 1) The USSR should provide information from their ocean fisheries program including chemical and biological analyses of fish collected globally.
- 2) Monitoring of rare species and potential danger to existing species should be undertaken. This task should be divided so that overlap is eliminated.
- 3) Agree on benthic species to be monitored in particular geographic areas, in addition to fish.
- 4) Develop a joint program for investigating techniques for providing and rehabilitating sealife from major pollution incidents.

First step

- : USSR to be invited to visit Woods Hole to review research on oil spill effects, to exchange information and to plan joint program.

Costs

- : Less than \$20,000 for travel and information exchange (from available funds).

Agencies

- : Interior, NOAA, EPA, NSF

VII. Biological and Genetic
Consequences of Pollution

Approved For Release 2000/09/06 : CIA-RDP79-00798A001000120006-8

Project VII.1

: Joint study of biological and genetic consequences of pollution.

Tasks

- : 1) Soviet group to visit NCTR at Pine Bluff in October (National Center for Toxicological Research). Other visits might be made at same time to Frederick Cancer Research Center at Fort Dietrich, EPA laboratories such as the water lab at Duluth or the primate lab at Perrine, the USDA labs at Fargo and Columbia, and the AEC labs at Oak Ridge.
- 2) Exchange of research information supporting environmental standards, with special attention to: (a) joint study of non-ionizing radiation, (b) joint study of effects of air pollution, and (c) several other joint studies proposed by EPA (effects of air pollution on vegetation, on forests, toxicology of Krypton-85, etc.).
- 3) Exchange of information on new industrial substances, looking to an early warning system.
- 4) Cooperative monitoring of contaminants, including: (a) determination of baseline levels, especially heavy metals, (b) set up tissue bank for pollutant burden studies, and (c) biological effects monitoring system.
- 5) Population studies including:
(a) epidemiological research study (US visitor to give lectures on our CHESS program), (b) replicate health effects studies in populations exposed to contrasting levels of air pollution, (c) populations dynamics of organisms, and (d) forest succession as affected by pollutants.
- 6) Joint study of environmental modeling, including comparison of US and Soviet results under the International Biological Program.
- 7) Joint technology assessment and long-range forecasting of environmental consequences.

Approved For Release 2000/09/06 : CIA-RDP79-00798A001000120006-8

- 2 -

VII. Biological and Genetic
Consequences of Pollution

8) Joint study of genetic effects on cells.

9) Joint investigation of mutagenicity of agricultural chemicals.

First step

: US to invite Soviet group to visit Pine Bluff and while in US to have conference planning overall program in this field.

Costs

: Cost dependent upon portions of program agreed upon. For FY 1973 only travel and initial exchange of information would be involved and estimated costs (in range of \$100,000) would come from existing funds.

Agencies

: EPA, USDA, NIEHS, AEC

VII. Biological and Genetic
Consequences of Pollution

- Project VII.2 : Joint program to exchange information and technology regarding the disposal of hazardous wastes.
- Tasks : 1) Reciprocal visits to review current practice and develop joint program.
- First step : US to contact USSR in late 1972.
- Costs : Travel funds (\$10,000) already available.
- Agency : EPA

VIII. Influence of Environmental
Changes on Climate

Project VIII.1

- : Joint US-Soviet program of monitoring atmospheric constituents that might affect climate.

Tasks

- : 1) US team to visit USSR in October 1972 to plan joint program of monitoring (using global air quality baseline monitoring stations in existence or planned for US and USSR under worldwide WMO program).
- 2) Soviet team to visit US baseline monitoring system in spring 1973 (stations at Mauna Loa, Hawaii, and Pt. Barrow, Alaska).
- 3) At later date, US visits to Soviet installations in Caucasus or elsewhere.
- 4) Intercomparison of instrumentation and standardization of observational and analysis methods; standardizing of data formats; sharing of data and analyzed results; exchange of computer programs.
- 5) Sharing of data with other countries under the WMO program.

First step

- : US to invite Soviet visit in spring 1973 and simultaneously explore Soviet invitation for US visit in October 1972 for preliminary exchange and planning.

Costs

- : Current funding for monitoring portions of program is \$6.5 million FY 1973, \$18 million FY 1973 on atmospheric modeling and simulation. Travel costs FY 1973 (about \$50,000) can be absorbed by agencies involved in the program. FY 1974 costs may be \$300,000.

Agency

- : NOAA

VIII. Influence of Environmental
Changes on Climate

Project VIII.2 : Study of environmental impact of major
mand-made projects.

Task : Exchange of information on models for
use in estimating impact on climate
and other aspects of environment.

First step : Explore Soviet willingness to invite
US group to USSR in near future.

Costs : Initial travel estimated at \$20,000
(from available funds).

Agency : NOAA, EPA, Corps of Engineers, NSF

VIII. Influence of Environmental
Changes on Climate

- Project VIII.3 : Joint exchange of atmospheric scientists to advance research on the effects of pollutants on climate and on the inter-regional transport of pollutants.
- Task : Identification of suitable opportunities in each nation and the selection of scientists to be exchanged.
- First step : US to contact USSR.
- Costs : Estimated at \$20,000 per year, exclusive of salary, per scientist, from available funds.
- Agency : EPA, NOAA

VIII. Influence of Environmental
Changes on Climate

Project VIII.4 : Exchange of information and explanation
of opportunities for joint research on
the effects of perturbation of the upper
atmosphere on climate.

Tasks : 1) Exchange of information on ongoing
research in the US and the Soviet Union.
2) Exploration of opportunities for under-
taking joint research.

First step : US team to visit USSR in October 1972.

Costs : For travel and information exchange,
\$5,000 from available funds.

Agency : DOT, Commerce

IX. Earthquake Prediction

- Project IX : Exchange information and initiate joint projects to improve earthquake prediction.
- Tasks :
- 1) Joint project covering the San Andreas fault and Tashkent earthquake area (mutual installation of detection equipment).
 - 2) Conference and information exchange on seismicity studies, regional geologic data, earthquake effects, design of resistant structures, economics, etc.
 - 3) Visits and information exchange on earthquake prediction research.
 - 4) Integrate, through data exchange, the Tsunami warning systems in the Pacific and eastern Siberia.
 - 5) Visits and information exchange regarding mechanisms of earthquakes and wave propagation.
 - 6) Explore possibilities for joint projects in such areas as active crustal deformation, satellite surveillance of tectonically active regions, and computer modeling of the earthquake prediction process.
- First step : US to invite Soviet team to visit San Andreas area in October 1972 for installation of equipment and initial exchange of data. Conference to be held during this visit in US, with follow-on visit of US team to Tashkent area in late 1972 or early 1973.
- Costs : Costs in FY 1973 estimated at a maximum of \$100,000, from which virtually all will be for travel and information exchange.
- Agency : Geological Survey

Project X.1 : Establish a joint US-USSR Eco-Arctic Research Program.

Tasks :

- 1) Initially US institutions and programs already active in arctic/subarctic research would agree with their Soviet counterparts to establish a global coordinating program under the Environmental Agreement.
- 2) A US team might go to the USSR as early as October 1972 to discuss coordinated research and agree on specific programs, with visits to field sites in both countries set during October-December 1972. Specific programs might include:
 - (a) Joint study of arctic/subarctic petroleum pipelines. This is a sensitive area, since the USSR has some technology lead, but mutual visits and exchange of information would be very useful. A joint team could visit sites in both Alaska and Siberia. The Soviet Petroleum Minister could be invited to participate.
 - (b) Joint study of environmental effects of exploration and development of oil and gas. US team would observe USSR oil development in arctic regions of Siberia, Soviets might view offshore drilling techniques in US.
 - (c) Joint study of stabilization of thermokarst and other disturbed arctic/subarctic areas.
 - (d) Ecological research into effects of fire in arctic/subarctic regions.
 - (e) Joint study of effects of All-Terrain Vehicles (ATVs) on vegetation and substrates of arctic/subarctic regions.

X. Arctic and Subarctic
Ecological Systems

(f) Study of impact of mine waste disposal practices in arctic/subarctic regions.

(g) Joint study of arctic water quality protection.

(h) Joint study of transportation problems in Arctic.

First step

- : US to propose US team visit Moscow and arctic/subarctic sites in USSR in October, with discussion of joint research plans. Alternatively, Soviets could make first visit, including trip to Alaska.

Costs

- : Initial costs would be for travel and first exchanges of information during FY 1973, in range of \$100,000 (from existing funds) depending on specific projects initiated.

Agencies

- : Interior, USDA, NOAA, NSF, Smithsonian, EPA, DOT

X. Arctic and Subarctic
Ecological Systems

Project X.2 : Joint study of permafrost.

Tasks :

- 1) Formation of joint US-Soviet group to travel together to institutions and field study sites for research on permafrost (including travel to Yakutsk and to Alaska).
- 2) Long-term exchange of scientists for period up to one year between institutions doing research on permafrost.
- 3) Production of joint US-Soviet studies.

First step : US to propose formation and itinerary for joint study group, first trip to take place October-to-November 1972.

Costs : Initial costs for trip and setting up joint study not to exceed \$20,000 (from available funds).

Agency : USGS, NSF

X. Arctic and Subarctic
Ecological Systems

- Project X.3 : Pooling of information through US access to data from Soviet project POLEX (Polar Oceanographic and Meteorological Experiment) and US project AIDJEX (Arctic Ice Dynamics Joint Experiment).
- Tasks : 1) At NSF invitation, three Soviet scientists visited AIDJEX pilot-station field camp in April 1972. US would propose immediate consultation in Moscow on POLEX and AIDJEX with plans to be made for sharing data.
- 2) Soviet teams would be invited to visit US installations and reciprocal US visits proposed.
- First step : US to propose visit to USSR in fall 1972 to discuss exchange.
- Costs : For entire programs, \$5-7 million over whole period of experiments. Initial visits in FY 1973 approximately \$10,000 (from available funds).
- Agency : NSF, NOAA

X. Arctic and Subarctic
Ecological Systems

- Project X.4 : Cooperation in Arctic/Subarctic ecosystem research in connection with International Biological Program (IBP).
- Tasks : 1) Tundra Biome investigations are going forward under IBP. It is proposed to extend this research to the taiga regions. The US would offer computer modeling programs for implementation in the USSR and provide data processing packages, while the USSR would provide tundra and taiga ecosystem data to the central data facilities.
- 2) US specialists would hope to visit USSR sites in this program.
- First step : US specialists will have chance to confer with Soviet specialists at V General IBP Assembly in Seattle in September 1972. US might propose early consultation in US or USSR to outline joint program.
- Costs : NSF currently spending \$1.2 million on US Tundra Biome research with contributions of other agencies \$300-400,000 annually. Over entire five-year span US costs might be \$2 million per year. FY 1973 estimate is \$20,000 for travel and information exchange.
- Agency : NSF

XI. Legal and Administrative

- Project XI.1 : Joint project to exchange information and experience regarding legal and administrative measures for protecting environmental quality.
- Tasks :
- 1) An initial conference in either Moscow or Washington to select topics of special interest to one or the other nation for joint study in such areas as:
 - Techniques for setting environmental standards, including the scientific basis for standards (e.g., animal studies, epidemiological studies, computer simulation),
 - alternate mechanisms and strategies for pollution control and enforcement (e.g., permits, effluent charges, prohibitions),
 - procedures to identify, evaluate, and inform decision-makers on the environmental effects of major government project (e.g., cost-benefit analysis, environmental impact statements, siting of facilities such as power plants),
 - procedures and systems for environmental monitoring,
 - administrative structure (i.e., national vs. regional vs. local, river basins or airsheds, etc.),
 - means of responding to citizen concerns,
 - arrangements to handle the financial and economic aspects of pollution control (i.e., financing industrial and municipal waste facilities, determining where the costs of pollution abatement ultimately fall, and determining whether such costs will be reflected in prices of goods on the international market),

- 2 -

XI. Legal and Administrative

-- approaches to particular problem areas, such as off-shore resource extraction.

2) Exchange of personnel to acquire operating experience working on environmental protection in the other nation's administrative structure. As an example, the US could have Soviet environmentalists participate in the development and analysis of environmental impact statements.

3) Conference of economists of the two nations to exchange information on analysis and modeling of the economic effects of alternative approaches to environmental protection.

<u>First step</u>	:	US to invite Soviet delegation to visit US as early as possible, perhaps October 1972, for initial contact and mapping out of work program.
<u>Costs</u>	:	Limited to travel and information exchange (est. \$20,000 from available funds).
<u>Agency</u>	:	CEQ, EPA, Justice, Commerce, Interior, CEA

XI. Legal and Administrative

- Project XI.2 : Exchange of information through U.S.A. Association for the United Nations (USA-UNA).
- Tasks : This private exchange is already underway. CEQ would lend its approval to the program and exchange information gained through other projects under Group XI.
- First step : Already underway.
- Costs : Privately funded.
- Agency : CEQ (in support of USA-UNA)